

General Certificate of Secondary Education

A572

**GCSE in Design and Technology:
Textiles Technology**

Unit A572 Sustainable Design

Specimen Paper

Time: 1 hour 30 minutes

Candidates answer on the question paper.

Additional materials:

Candidate
Forename

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Candidate
Surname

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Centre
Number

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Candidate
Number

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INSTRUCTIONS TO CANDIDATES

- Write your name in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each answer carefully and make sure you know what you have to do before starting your answer.
- Answer **all** the questions.
- Do not write in the bar codes.
- Do not write outside the box bordering each page.
- Write your answer to each question in the space provided.

INFORMATION FOR CANDIDATES

- The number of marks for each question is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is 60

Section A

Answer **all** questions.

1 This symbol stands for:



- (a) School safety policy
- (b) British safety consideration
- (c) British safety institute
- (d) British standards institute

[1]

2 The abbreviation of **COSHH** stands for:

- (a) Centre of social health hygiene
- (b) Central office supporting health hazards
- (c) Control of substances hazardous to health
- (d) Central office substances hazardous to health

[1]

3 Which of the following is **not** a renewable energy resource?

- (a) water
- (b) coal
- (c) wind
- (d) solar power

[1]

4 Biodegradable means that it can:

- (a) grow naturally in the environment
- (b) naturally rot in the environment
- (c) be re usable as a different product
- (d) not grow naturally in the environment

[1]

5 The role of a designer of sustainable products is to:

- (a) create innovative sustainable designs
- (b) modify existing designs
- (c) use traditional designs
- (d) design products that can be bought cheaply

6 In the space below draw the symbol that would be found on a product that can be recycled.

[1]

- 7 The term recycling means to a product. [1]
- 8 State what is meant by a product being 'Fair trade'
..... [1]
- 9 What is the term given to the appearance of an object including its shape, colour and texture?
..... [1]
- 10 What is the name given to the collection of data on human body measurements?
..... [1]

Decide whether each of the following statements is **true** or **false**.

	True	False
11 Smart materials are materials whose properties can change due to changes in pressure, force, light or temperature.	<input type="checkbox"/>	<input type="checkbox"/>
12 A renewable source is one that cannot be renewed within 50 years.	<input type="checkbox"/>	<input type="checkbox"/>
13 Chemicals that can cause harm to people and animals are called bio products.	<input type="checkbox"/>	<input type="checkbox"/>
14 Job production is used to make large batches of products.	<input type="checkbox"/>	<input type="checkbox"/>
15 Ethical trading is a term used to show that the basic rights of the employees are protected.	<input type="checkbox"/>	<input type="checkbox"/>

[5]

Section A Total [15]

Section B

Unit 2 Innovator

You are advised to spend 40 minutes on this section.

You need to answer these questions through one specific chosen area.
Please tick in the box below to show your chosen area:

Electronics & Control Systems	<input type="checkbox"/>
Food Technology	<input type="checkbox"/>
Graphic Products	<input type="checkbox"/>
Industrial Technology	<input type="checkbox"/>
Resistant Materials	<input type="checkbox"/>
Textiles Technology	<input type="checkbox"/>

Eco design is about designing a product with the environment in mind and trying to minimise the damage to the environment throughout a products life cycle.
A designer must think about the impact on the environment.

- 1 (a)** Explain what the following areas are in the design process.

Product planning:

.....

.....

.....

..... [2]

Development:

.....

.....

.....

..... [2]

Functionality:

.....

.....

.....

..... [2]

Safety:

.....

.....

.....

..... [2]

Aesthetics:

.....

.....

.....

..... [2]

A manufacturer wishes to develop a range of environmental products to be sold in a shop at the Science Museum in London.

(b) Name your product.

..... [1]

(c) Identify **four** specification points for your chosen design product.

1

..... [1]

2

..... [1]

3

..... [1]

4

..... [1]

Total [15]

Initial Ideas

- 2 (a)** Use sketches and notes to show your initial ideas for your chosen product.

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[5]

- (c) With reference to the 6R's select and describe **two** ways in which your product could address **two** of these issues.

[2]

[2]

[2]

[2]

Total [15]

3 (a) (i) Give a suitable technique/method of construction for your product.

..... [1]

(ii) Describe **four** stages relevant to this technique/method.

1 [1]
.....

2 [1]
.....

3 [1]
.....

4 [1]
.....

(b) Name a piece of equipment that would be needed for your technique/method.

[1]

(c) Give **two** safety precautions that should be taken into account when using tools and equipment.

1 [1]
.....

2 [1]
.....

(d) Explain, using notes and diagrams, what is meant by the 'life cycle' of a product.

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[4]

(e) Products become 'obsolete' after a few years.
Describe the difference between fashion and planned obsolescence.

[3]

[3]

Total [15]
Paper Total [60]

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The maximum mark for this paper is **60**.

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Section A		
Question Number	Answer	Max Mark
1	This symbol stands for: D	[1]
2	The abbreviation of COSHH stands for: C	[1]
3	Which of the following is not a renewable energy resource? B	[1]
4	Biodegradable means that it can: B	[1]
5	The role of a designer of sustainable products is to: A	[1]
6	In the space below draw the symbol that would be found on a product that can be recycled. 	[1]
7	The term recycling means to a product. re-use	[1]
8	State what is meant by a product being 'Fair trade' fair wages for the workers in less economically developed countries (LED's)	[1]
9	What is the term given to the appearance of an object including its shape, colour and texture? aesthetics	[1]
10	What is the name given to the collection of data on human body measurements? anthropometrics	[1]

Section A		
Question Number	Answer	Max Mark
11	Smart materials are materials whose properties can change due to changes in pressure, force, light or temperature. true	[1]
12	A renewable source is one that cannot be renewed within 50 years. false	[1]
13	Chemicals that can cause harm to people and animals are called bio products. false	[1]
14	Job production is used to make large batches of products. false	[1]
15	Ethical trading is a term used to show that the basic rights of the employees are protected. true	[1]
Section A Total		[15]

Section B		
Question Number	Answer	Max Mark
1(a)	<p>Eco design is about designing a product with the environment in mind and trying to minimise the damage to the environment throughout a products life cycle.</p> <p>A designer must think about the impact on the environment.</p> <p>Explain what the following areas are in the design process.</p> <p>Two marks for each section.</p> <p>Product Planning: 2x1 [2]</p> <ul style="list-style-type: none"> • Research, analysis of existing products. • Technical data of product. • Disassembly of existing products. • Properties required by product. • Choosing right materials & components. • Method of manufacture. • Tools & equipment needed. <p>Development: 2x1 [2]</p> <ul style="list-style-type: none"> • Changing an aspect or all of the design; fabric, fastenings, colour, size etc. • Enhancing a product with decoration. • Adding extra details – pockets, top stitching, pleats etc. • Range of ideas. <p>Functionality: 2x1 [2]</p> <ul style="list-style-type: none"> • Is it fit /capable for its intended purpose/ use? • Ease of manufacture. • Works efficiently. • Looks good & is saleable. • Enhance users/ wearers image. <p>Safety: 2x1 [2]</p> <ul style="list-style-type: none"> • Safe use & disposal of textile product. • Legal requirements & legislation. • Safety standards- labelling BSI etc. • Safety in the workplace & safety of workers in making. • Safety of user. <p>Aesthetics: 2x1 [2]</p> <ul style="list-style-type: none"> • The look / appearance of the product. • Style of product. • Properties of product- drape, colour, texture etc. 	[10]

Section B		
Question Number	Answer	Max Mark
1(b)	<p>Name your product.</p> <p>One mark for any suitable product.</p>	[1]
1(c)	<p>Identify <u>four</u> specification points for your chosen design product.</p> <p>One mark for each specification point. Max four.</p> <p>1x4 [4]</p> <p>Generic design points e.g. 'cheap', 'durable', 'light' etc NOT acceptable</p> <ul style="list-style-type: none"> • Age/ target market/ user. • Size range, ergonomic/ anthropometrics. • Fibre/ fabric properties. • Style • Care considerations/ maintenance/ comfort. • Fabric techniques/ finishes. • Components required. • Production/ manufacturing methods. 	[4]

Section B		
Question Number	Answer	Max Mark
2(a)	<p>Use sketches and notes to show your initial ideas for your chosen product.</p> <p>Maximum of six marks. 6x1 [6]</p> <ul style="list-style-type: none"> • Design idea with no notes/ annotation. • One idea with labelling. • More than one idea with notes. • A range of design solutions & annotation. • A range of design solutions, annotation and colour. • A very well drawn & creative range with annotation. 	[6]
2(b)	<p>Use notes and sketches to develop <u>one</u> of your initial ideas.</p> <p>Answers must reflect the product focus & refer to 'design need'.</p> <p>Maximum of five marks. 5x1[5]</p> <ul style="list-style-type: none"> • One developed solution showing an idea from the initial ideas with some development but no annotation • One developed idea with notes • Clear & annotated development of an idea. • Idea & annotation that refers / links to specification points. • Idea & annotation that refers to three specification points <p>Points to consider:</p> <p>Front & back views.</p> <p>Techniques/ methods identified.</p> <p>Colours identified or shown.</p> <p>Sizes/ measurements.</p> <p>Materials, fastenings, components.</p> <p>Finishing.</p> <p>Care considerations</p> <p>Costing.</p>	[5]
2(c)	<p>With reference to the 6R's select and describe <u>two</u> ways in which your product could address <u>two</u> of these issues.</p> <p>Credit any reference to any two of the 6 R's. 2x2 [4]</p> <ul style="list-style-type: none"> • Recycle - material, product, disassembly. • Re- use - pass on. (friend, family), charity shop, third world country. • Reduce - production process, costs, emissions, wastage materials, dyes, transport, life cycle. • Refuse - use of sustainable materials, biodegradable. Materials we should refuse to use. • Re think - materials & components used, purpose of product. • Repair - mending, sewing, fixing products. 	[4]

Section B		
Question Number	Answer	Max Mark
3(a)(i)	<p>Give a suitable technique/method of construction for your product. Any one suitable textile technique or method.</p>	[1]
3(a)(ii)	<p>Describe <u>four</u> stages relevant to this technique/method. Four marks for description of relevant stages relating to i) technique or method selected. 4 x 1 [4]</p> <ul style="list-style-type: none"> • Preparation of materials. • Specialist tools & equipment. • Method of making / process referring to specialist terminology. • Finishing. 	[4]
3(b)	<p>Name a piece of equipment that would be needed for your technique/method. Any one suitable / relevant piece of specialist equipment needed for (a)(ii). Do not credit any repeats from (a)(ii).</p>	[1]
3(c)	<p>Give <u>two</u> safety precautions that should be taken into account when using tools and equipment. Two marks: 2x1 [2]</p> <ul style="list-style-type: none"> • Storage of chemicals/ ventilation to refer to dyes. • Protective clothing • Safety labelling • Safety of machinery – sewing, cutting, pressing. 	[2]
3(d)	<p>Explain, using notes and diagrams, what is meant by the 'life cycle' of a product. Four marks for explanation of the 'life cycle' of a product in correct order. 4x1 [4] List = max 2 marks.</p> <ul style="list-style-type: none"> • From design to disposal • Raw materials- where they came from harvested/ made. • Production process- how the product is made. • Transport and distribution- best method. • Uses- intended function. • Recycling • Care and maintenance • Disposal – recycled/ biodegradable. 	[4]

Section B		
Question Number	Answer	Max Mark
3(e)	<p>Products become 'obsolete' after a few years. Describe the difference between fashion and planned obsolescence.</p> <p>Three marks for any correct three points. 3x1 [3]</p> <p>Planned Continually changing designs. Specific life span/ time limit. To persuade users to up grade/ replace. Product fails after a specified time by manufacturer. Becomes obsolete/ non functional. To generate long term sales volume by reducing time between repeat purchases.</p> <p>Fashion In style and out of style within a planned season. Continually changing designs. Minor 'feature' changes/ re styling. 'Feeling' out of date. Allows for 'self expression' Cheaper Replaceable.</p>	[3]
Section B Total		[45]
Paper Total		[60]